

## AMENDMENTS TO THE CLAIMS

1. (Original) A  $\gamma$ -proteobacterium having an ability to produce a target substance and modified so that an ArcA protein does not normally function.

2. (Original) The  $\gamma$ -proteobacterium according to claim 1, wherein the ArcA protein that normally functions is a protein defined in the following (A) or (B):

(A) a protein having the amino acid sequence of SEQ ID NO: 32;

(B) a protein having the amino acid sequence of SEQ ID NO: 32 including substitution, deletion, insertion or addition of one or several amino acids and improving an ability to produce a target substance when the protein does not normally function in the  $\gamma$ -proteobacterium compared with the case where the protein normally functions.

3. (Original) The  $\gamma$ -proteobacterium according to claim 1, wherein the ArcA protein that normally functions is a protein having 70% or more of homology to the amino acid sequence of SEQ ID NO: 32 and improving an ability to produce a target substance when the protein does not normally function in the  $\gamma$ -proteobacterium compared with the case where the protein normally functions.

4. (Original) The  $\gamma$ -proteobacterium according to claim 1, wherein the ArcA protein that normally functions is a protein having the amino acid sequence of SEQ ID NO: 32 including substitution, deletion, insertion or addition of 2 to 20 amino acids and improving an ability to produce a target substance when the protein does not normally function in the  $\gamma$ -proteobacterium compared with the case where the protein normally functions.

5. (Original) The  $\gamma$ -proteobacterium according to ~~any one of claims 1 to 4~~ claim 1, wherein the ArcA protein does not normally function by means of disruption of an *arcA* gene on a chromosome.

6. (Original) The  $\gamma$ -proteobacterium according to claim 5, wherein the *arcA* gene is DNA defined in the following (a) or (b):

(a) DNA containing the nucleotide sequence of the nucleotide numbers 101 to 817 of SEQ ID NO: 31;

(b) DNA hybridizable with the nucleotide sequence of the nucleotide numbers 101 to 817 of SEQ ID NO: 31 or a probe that can be produced from the nucleotide sequence under the stringent condition and coding for a protein that improves an ability to produce a target substance when the protein does not normally function compared with the case where the protein normally functions.

7. (Currently Amended) The  $\gamma$ -proteobacterium according to ~~any one of claims 1 to 6~~ claim 1, which is a bacterium belonging to the genus *Escherichia*.

8. (Currently Amended) The  $\gamma$ -proteobacterium according to ~~any one of claims 1 to 7~~ claim 1, wherein the target substance is an L-amino acid.

9. (Original) The  $\gamma$ -proteobacterium according to claim 8, wherein the L-amino acid is L-lysine or L-glutamic acid.

10. (Original) A method for producing a target substance, which comprises culturing the  $\gamma$ -proteobacterium according to any one of claims 1 to 9 in a medium to produce and accumulate the target substance in the medium or cells and collecting the target substance from the medium or cells.